

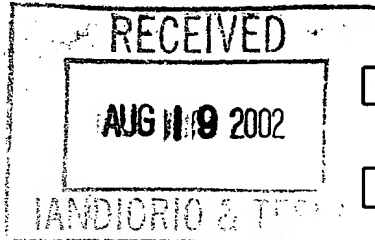


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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/741,597	11/01/1996	RICHARD M. WIESMAN	FM-147J	1419

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EXAMINER	
GOINS, DAVETTA WOODS	
ART UNIT	PAPER NUMBER

2632  
DATE MAILED: 08/14/2002

25

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

08/741,597

Applicant(s)

WIESMAN ET AL.

Examiner

Davetta W. Goins

Art Unit

2632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 38-67 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 38-67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 38-45, and 52-54 are rejected under 35 U.S.C. 102(b) as being anticipated by Armstrong et al. (US Pat. 5,856,776).

In reference to claims 38, 43, 54, 55, Armstrong discloses a) the claimed means for generating communication signals at a first location for transmission on a powerline and means for receiving the communication signals at a second location, which is met by a signaling unit 24 used to transmit and receive signals over the low voltage cables 22A and 22B (col. 11, lines 1-7), b) the claimed means for reactively coupling the communication signals to the powerline without tapping the powerline, which is met by each voltage cables 22A and 22B having a sheath which protects the cable and acts as an ear/neutral return conductor; the cable sheath electromagnetically shields the inner conductor of the cable. The cable sheath will prevent signals from being coupled onto the cable conductor; the signals will be induced in the sheath. The cable sheath at the cable termination must be insulated from the transformer housing (col. 4, lines 38-59, col. 5, lines 11-25, and col. 10, lines 49-61).

Art Unit: 2632

In reference to claim 39, Armstrong discloses the claimed means for generating includes a first communications device, which is met by the signaling system along with a voltage station and other signaling systems form a communications system (col. 11, lines 13-20).

In reference to claims 40, 42, 44, and 63-66, Armstrong discloses the claimed means for inductively coupling, which is met by the signaling unit includes an inductance monitor unit 64 (col. 12, lines 11-20).

In reference to claims 41, 45, Armstrong discloses the claimed means for inductively coupling includes a communications core element disposed about the powerline and a plurality of windings disposed about the communications core element for coupling the communication signals to and from the powerline, which is met by a magnetic core formed by two sections 30 and 31, which section 30 having a drive winding 32, a sense winding 33, and a monitor winding 34 (col. 11, lines 21-37).

In reference to claims 52 and 53, Armstrong discloses the claimed storage device proximate the first location, which is met by power supply unit 63 including a suitable storage means (col. 12, lines 5-10).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

Art Unit: 2632

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 46-51 and 56 rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong et al. in view of Abraham (US Pat. 5,559,377).

In reference to claims 46-48, although Armstrong does not disclose the claimed means for extracting includes means for reactively coupling from the powerline the communication signals transmitted from the second location, he does disclose a signaling unit 24 used to transmit and receive signals over the low voltage cables 22A and 22B (col. 11, lines 1-7). Abraham a central computer 139 issues an addressable command which is transmitted via a master modem 141 and coupler 137 to the substation over power or conventional lines 138, the command is transmitted through the home couplers 123 and modem 121, the meter reading is recorded, transmitted by the home modem 121 through couplers 123, through distribution transformer 126, over power line 129, the couplings include a pair of serial LC circuits in which novel air-core transformers for both transmission and reception which serve as the inductive (L) component of the respective LC circuits (col. 16, lines 21-47, and col. 7, lines 1-14). Since Armstrong discloses a system with a signaling means which is capable of transmitting and receiving signals within a communication system, it would have been obvious to one of ordinary skill in the art to incorporate a means for extracting communication signals from a second location, as disclosed by Abraham, with the system of Armstrong, to provide communication to be sent over long distances.

In reference to claim 49, Armstrong discloses the claimed means for inductively coupling includes a communications core element disposed about the powerline and a plurality of windings disposed about the communications core element, which is met by a magnetic core formed by two sections 30 and 31, which section 30 having a drive winding 32, a sense winding 33, and a monitor winding 34 (col. 11, lines 21-37).

In reference to claim 50, although Armstrong does not disclose the claimed means for encoding the communication signals, he does disclose a signaling system along with a voltage station and other signaling systems form a communications system (col. 11, lines 13-20). Abraham discloses a central computer 139 which issues an addressable command which is transmitted via a master modem 141 (col. 16, lines 33-47). Since Armstrong discloses a system with a signaling means which is capable of transmitting and receiving signals within a communication system, it would have been obvious to one of ordinary skill in the art to incorporate a means for encoding the communication signals, as disclosed by Abraham, with the system of Armstrong, to ensure that the communication signals will be sent long distances without any interference.

In reference to claim 51, Armstrong does not specifically disclose the claimed means for inductively coupling further including driver means for providing low voltage, high current pulses of the communication signals to the plurality of windings to inductively couple the pulses to the powerline. Abraham discloses powerline communications in which the aircore in the coupling transformer gives negligible pulse dispersion, the air

coil comprising of a primary winding 38 and a smaller secondary winding 40, the current is maximized by creating a band pass filter at the carrier frequency FA, and the coupling means 14, 22 are suitable for communication in association with wide range of power-line voltages which can be used for utilizing high and low voltage through power line transformers (col. 4, lines 16-24, col. 10, lines 1-11, and col. 11, lines 62-67). Since Armstrong discloses an inductor coupling means to a cable for transmitting/receiving communication signals, it would have been obvious to one of ordinary skill in the art to incorporate a driver means for providing various signals to the powerline, as disclosed by Abraham, to ensure that the communication signal will be transmitted and received over the powerline.

In reference to claim 56, Armstrong discloses a) the claimed sensor for sensing a condition of a powerline, which is met by each voltage cables 22A and 22B having a sheath which protects the cable and acts as an ear/neutral return conductor; the cable sheath electromagnetically shields the inner conductor of the cable. The cable sheath will prevent signals from being coupled onto the cable conductor; the signals will be induced in the sheath. The cable sheath at the cable termination must be insulated from the transformer housing (col. 4, lines 38-59, col. 5, lines 11-25, and col. 10, lines 49-61).

Although Armstrong does not disclose the claimed base station, he does disclose a signaling unit 24 used to transmit and receive signals over the low voltage cables 22A and 22B (col. 11, lines 1-7). Abraham discloses house 119 receiving electric power from utility having a modem 121 (col. 16, lines 3-19). Since Armstrong discloses a means for

Art Unit: 2632

transmitting and receiving signals in a communication system, it would have been obvious to one of ordinary skill in the art to include a base station, as disclosed by Abraham, to allow communication signals to be transmitted over long distances and monitored at a remote location.

5. Claims 57-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abraham in view of Armstrong et al.

In reference to claims 57, 60, 64, 67, Abraham discloses a) the claimed plurality of modular core elements for disposing about an a.c. powerline, which is met by first and second coupling means 14 and 22 (Fig. 6), 2) the claimed winding layer to be energized by the a.c. powerline, including a plurality of windings disposed about each of the modular core element, wherein the windings of each of the modular core elements are interconnected and means for sensing a condition in or about the a.c. powerline, which is met by a primary winding 38 and a smaller secondary winding 40 situated coaxially within the primary winding (col. 8, lines 23-29), and 3) the claimed controller means, powered by the windings and responsive to the means for sensing, for receiving a signal indicative of the condition sensed, which is met by coupling capacitor network, which is set to resonate with the primary winding at the carrier frequency  $F_A$ , creating a band pass filter and maximizing the current (col. 9, lines 51-67), each house 119 receiving electric power via modem 121 and air coil transmitter and receiver coupler circuit 123 (col. 15, lines 60-67 and col. 16, lines 1-19). Abraham does not disclose the claimed coupling the



Art Unit: 2632

communication signals to the powerline without tapping the powerline. However, he does disclose air coils with inductances L1 and L2 which are inductively capacitively creating an air-core transformer (col. 2, lines 16-43). Armstrong discloses a system comprising voltage cables 22A and 22B having a sheath which protects the cable and acts as an ear/neutral return conductor; the cable sheath electromagnetically shields the inner conductor of the cable. The cable sheath will prevent signals from being coupled onto the cable conductor; the signals will be induced in the sheath. The cable sheath at the cable termination must be insulated from the transformer housing (col. 4, lines 38-59, col. 5, lines 11-25, and col. 10, lines 49-61). Since both Abraham and Armstrong disclose coupling devices used to transmit/receive communication signals, it would have been obvious to one of ordinary skill in the art to incorporate a non-contact means for not tapping the powerline, as disclosed by Armstrong, with the system of Abraham, to ensure that the powerline won't be damaged and not lose any communication signals that are transmitted from the remote location.

In reference to claims 65, 66, although Abraham does not disclose the claimed modular core elements are formed of highly permeable ferromagnetic material, low magnetic permeability, or a material of foam, he does disclose that the air-gap is filled with resin which insulates the AC current from the transceiver coupling means 14, 22 is of a magnetic coil 64 (col. 2, lines 16-28 and col. 14, lines 19-31). Armstrong discloses voltage cables 22A and 22B having a sheath which protects the cable and acts as an ear/neutral return conductor (col. 4, lines 38-59, col. 5, lines 11-25). Since Abraham

discloses that the air-gap is filled with an insulator, it would have been obvious to one of ordinary skill in the art to incorporate a sheath, as disclosed by Armstrong, with the system of Abraham, over the powerlines to allow the magnetic signals to transfer through the housing of the core elements and transmit the signals to and from the powerline without damaging the powerlines.

In reference to claim 59, Abraham discloses the claimed windings of each of the modular core elements are interconnected electrically in series or in parallel, which is met by the primary winding 46 of the second air coil 44 thereafter being serially connected to the other power line 12 (col. 8, lines 30-42).

In reference to claim 61,62, Abraham discloses the claimed sensing a condition including means for sensing voltage and current of the a.c. powerline, which is met by LC circuits include respective serially and parallel connected capacitor networks 34, 42, each capacitor in series which evenly divides down the AC voltage, the use of the resistors 35,45 serve to minimize the DC current (col. 8, lines 1-15).

In reference to claim 63, Abraham discloses the claimed means for reactively coupling includes an inductor, which is met by coupling 14, 22 include a pair of serial LC circuits in which novel air-core transformers for both transmission and reception which serve as the inductive (L) component of the respective LC circuits (col. 7, lines 1-14).

Art Unit: 2632

6. The prior art of record and not relied upon is considered pertinent to the applicant's disclosure as follows. Whyte et al. (US Pat. 4,142,178) which discloses a coupling device for power lines.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davetta W. Goins whose telephone number is 703-306-2761. The examiner can normally be reached on 4-5-9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery A. Hofsass can be reached on 703-305-4717. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3988 for regular communications and 703-305-3988 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-7666.

*Davetta W. Goins*

D.W.G.

August 9, 2002

Davetta W. Goins  
Art Unit 2632